

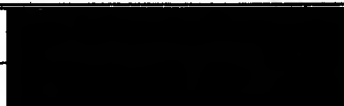
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SC-15862
cy-#1

12 November 1954

MEMORANDUM FOR: Assistant Director, Research and Reports
THROUGH: Chief, Geographic Research Division
SUBJECT: The Coordination of Photo Intelligence and
Communications Intelligence

OEG
-time to
formulate
staff study
to increase
to carry out
org. program
in producing
this source
in systematic
basis.
OEG
6 Jan 55

1. PROBLEM:

The development of fuller coordination of photo intelligence and communications intelligence.

2. FACTS BEARING ON THE PROBLEM:

a. At present there is little effort on the part of COMINT analysts to use photo intelligence as a correlative source of information. In large part this is because there is no routine supply of it made available to them. This is true throughout the Agency.

b. The physical location of D/GP outside of the Special Center precludes any use of COMINT in D/GP although this is the only photo intelligence unit in Washington with the majority of its personnel cleared to use COMINT.

c. The personnel of D/GP are fully occupied accomplishing projects requested from outside of the Special Center, and with the new ruling on overtime will be forced to reduce the number of projects they accept.

d. The procurement of adequate aerial photography is slow and often impossible.

3. DISCUSSION:

a. A sampling of the divisions that use COMINT in ORR and of OCI revealed that many of the personnel, while familiar with photo intelligence as a source of information, do not have knowledge of the areas from which aerial photography is available. Many falsely believe that only current photography can be of use to them. Those who have used mission reviews prepared by the Military Services organizations have found them unsatisfactory. An exception to this is the military desks. This is understandable since the mission reviews are definitely pointed toward meeting military requirements.

TOP SECRET

Extended conferences (see Annex A) with various division chiefs in ORR and OCI and with the analysts themselves shows that there is eagerness on their part to use photo intelligence. There is wide acceptance of the thesis that photographs can be made to supply a large amount of information of great importance. They are sure this will fill gaps in our present knowledge of the details of phases of the situation that can be observed on aerial photographs.

The time and conditions are not opportune for the establishment of a cooperative system for photo and communications intelligence such as was used in World War II by MIS.G2.WDGS (Annex B). However, the better coordinated the two sources are now the more efficient a cooperative action will be in the future.

b. Since D/GP is called upon to service all parts of CIA, it is important that it not be so cloistered that it is inaccessible to any analyst in CIA who needs its aid. It also is important that D/GP be accessible to persons outside the Agency who have an interest in photo intelligence. If D/GP is physically located in the Special Center, the present close cooperation between D/GP and the photo interpreters of the Military Services units will be very seriously reduced to the detriment of the Agency effort since the Agency depends upon these units and their good will for the aerial photography D/GP uses.

c. Although D/GP is at present working in cramped quarters and is shorthanded, the situation will be alleviated by the planned move to new quarters and the induction of personnel to T/O strength. Until the move is made, D/GP will operate at lowered efficiency because of crowding. Until the additional personnel are added and have finished their general and divisional training periods, it will be necessary to reduce the number and types of projects that are accepted. The need for this reduction in service to requesting divisions is made more acute by the no-overtime ruling. At present every urgent request pushes routine work into the evening hours and expansion of the services offered is prevented. The pressure falls unequally upon the photo analysts and the administrators, with the latter suffering more than the former. The administrators, being photo analysts, attempt to absorb most of the emergency work and thus allow the analysts to meet deadlines.

Full exploitation of the photography now available to D/GP should produce a volume of information about equal to that from any other source. To do this would require a considerable expansion of D/GP in both space and personnel.

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A conservative estimate of the number of aerial photographs being received currently in Washington is 1000 prints a day. These are received neither in a uniform flow nor at one receiving point. There is no systematic scanning of this material by the equivalent of the reading panels that scan other types of incoming intelligence material. The development of a panel to properly exploit the photographs as they are received would require coordination with USAF and USN at a high level, since it would require extensive reorganization of handling photographs in each installation. All services would gain by the establishment of the panel.

That such a panel is needed is suggested by USAF estimates that during the Korean policing action aerial photographs were put into dead storage when less than 20 per cent of the intelligence information falling within the purview of Air Force had been extracted. It is very questionable that as much as 1 per cent of the intelligence information from this source was used by the Agency during the Korean episode. In part, this was because D/GP was not organized in time to be of assistance and because the military establishments had no conception of the photo intelligence needs of the Agency nor had they the personnel to implement those needs except on a very urgent request basis.

If the task of reviewing the total current flow of photography into Washington for CIA needs is assumed by D/GP, then it will require either complete re-orientation of the operation of D/GP or a material increase in the T/O of the division. Taking 1000 photographs per day as a unit for estimates of manpower needed, the following develops:

- (1) A scanning panel of three photo analysts with broad perspective on CIA needs;
- (2) A reporting unit of eight photo analysts to prepare extracts of the photo information found on the 25 per cent of the photography considered worth exploiting by the scanning panel, these data to be circulated to the substantive analysts throughout the Agency in the formats suggested in Annex C;
- (3) A project unit of three photo analysts to accomplish projects requested by the substantive analysts on the basis of the reviews circulated from the reporting staff.

Thus, a total of 14 photo analysts with the necessary typing and duplicating support will be needed to handle 1000 prints per day.

In the event of war the load that may be thrown upon D/GP can assume gigantic size. A single modern reconnaissance aircraft has the capacity of producing 7000 photographic negatives on a single reconnaissance mission. To process fully the material from a single theater would

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require an organization far beyond the limits of reason. Fortunately, under war conditions the scene shifts so rapidly that field units of the military services will have to skim the information of immediate value, except that directed by knowledge of COMINT. Thus, the wartime expansion of D/GP cannot be geared to the expansion in the flow of photographs but must be restricted to that expansion necessary to produce photo intelligence most lucrative to CIA. Probably the field for this high development will be the coordinated effort of photo intelligence and COMINT. Thus, it becomes pressing that now, in a time of reduced photo flow and relatively low pressure, ways and means for this coordination be explored and tested.

D/GP has the capacity for testing the production of photo information on a pilot basis for a limited geographic area of responsibility.

d. The time that elapses between reviewing new aerial photography as it arrives in Washington and the earliest normal availability of it to D/GP varies from three weeks (USAF) to three months (USN). On an immediate emergency need basis, limited amounts of photographs may be borrowed by D/GP for periods up to 72 hours before processing by the services begins. Once photography enters the channels of normal processing, it is practically impossible to regain it for study, regardless of the importance of the study, until it has passed through the normal cycle of processing. This is the most serious drawback to rapid extraction of photo information for use in CIA.

Evidence from the reaction seen through COMINT strongly suggests that more photography is being produced in the various theaters than is known in photographic centers in Washington. It is doubtful that any of this surreptitious photography gets to Washington until long after it is taken and it is no longer of immediate interest. It is probable that much of it never gets to Washington.

The very brief time allowed D/GP to discover possible CIA photo targets for a specific overflight does not allow a proper canvass of interested analysts. The current method also entails unnecessary extension of the group who may suspect that an overflight is being planned. All of this combines to greatly reduce the number of targets ultimately covered that are of particular interest to CIA.

4. CONCLUSIONS:

a. The use of information from aerial photographs can be improved greatly by making substantive analysts more fully aware of photography help by D/GP and the content of that photography.

b. The main operation of D/GP must be carried on outside of the Special Center, but D/GP should have one of its members detailed on a full time basis to a desk within the Center.

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c. The present congestion within D/GP will be relieved somewhat when it moves to its new quarters (now estimated as spring 1955) and when it is up to T/O strength. Re-orientation of the basic operation of D/GP can make it more useful to substantive analysts. Serious thought should be given to the establishment of a formal inter-service scanning panel for incoming aerial photographs.

d. The procurement of aerial photographs by D/GP has improved since the inauguration of the division, but not so much as anticipated because of conditions beyond its control.

5. RECOMMENDATIONS:

a. D/GP should prepare special mission reviews for selected areas of high interest to substantive analysts. This should be on a routine basis and should hold priority over other projects except those especially designated by Ch/GP (see Annex C).

b. A representative of D/GP should be detached to serve as liaison with personnel in the Special Center and to perform much of the immediate interpretation needed by them. The high degree of interest expressed by CS/SOV, OCI, in photo intelligence suggests that the desk of the liaison analyst should be situated in the physical area of CS/SOV.

c. The objectives of D/GP should be reviewed internally with the aim to reduce the number of time-consuming projects of limited application and increase the routine production of information of interest to a broader clientele.

d. The establishment of an inter-service scanning panel for incoming aerial photographs should be explored at a high level of command.

e. The possibility of establishing a direct channel for procurement of aerial photographs from the producing agencies in the field to CIA should be explored.

f. Ch/GP should be custodian of a continually revised list of CIA photo targets for use in connection with planning overflights.



Consultant for Photo-Intelligence

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ANNEX A

CONFERENCES HELD

With D/I, D/Tr, D/M in ORR

These areas of ORR are fully aware of and extensively use the facilities of D/GP. They are not fully aware of the help they can be to D/GP in finding installations of particular COMINT interest. In each of these divisions there are questions posed by COMINT that under ideal conditions are at least partially answerable by photo information. Since photo procurement in its widest sense is far from ideal, the photo information response at present will be low. However, unless D/GP is alerted to the questions there can be no response. Evidence that key personnel and/or material is being moved to a certain area is indicative of construction of an installation. If photography is available or can be procured, the extent and importance of the project can be evaluated better.

Such information in the hands of D/GP will do three things: alert the photo analysts to the importance of installations while scanning photographs for selection; note installations unrelated to an immediate problem while working on a project; compile a want list for overflight.

To increase the capacity of the individual substantive analysts D/GP should expand its training program with courses directed to adding to the skills of the analysts. Each course should be pointed to the needs of a particular group of analysts. This will work two ways: relieve D/GP of much simple photo interpretation; increase the capacities of the substantive analysts and thus their value to CIA.

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With D/Mil, CS/Sov (OCI)

The Photo Interpretation units attached to the several military forces produce a type of P.I. Report that can and does supply the major part of the photo intelligence needs of D/Mil. D/Mil analysts should be made fully aware of the conditions under which these reports are produced in the military establishments. The Service units are manned by highly skilled military photo interpreters who are better equipped to deal with strictly military interpretation than are the analysts attached to D/GP. The doctrine under which these interpreters operate separates them from extensive knowledge of related intelligence. Their reports are judicious readings of the photographs available.

There are times and situations in which such pure photo interpretation does not fully meet the needs of D/Mil analysts. Under such conditions D/GP will be found useful. Analysts from D/Mil and D/GP working together can weld the photo information and information from other sources into a single piece of intelligence. Requests for cooperative aid should be made directly from D/Mil to D/GP through their respective Chiefs.

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With D/Econ, CS/Sov (OCI)

Unlike D/Mil, D/Econ does not have a steady flow of photo information from the Military Service photo interpretation units. In general, such service-unit originated reports as are available are slanted toward military needs and particularly toward targeting data. Many items of little or no interest to military services are of high interest to D/Econ.

The support of D/Econ analysts by D/GP can and should be expanded considerably. The simplest way to initiate this expansion is to have both sets of analysts gain a better understanding of each's capabilities and needs. This introduction should be followed by regularly scheduled interchanges of ideas and needs.

For certain kinds of problems that face D/Econ analysts any photography, even that taken by the German Air Force ten years ago, will be of use. When the problems are geographic or have a geographic facet or are related to installations that have been in existence for ten years or more, then the German photography covering most of the USSR west of the Urals will be found worth investigating. To a much more limited degree, this photography can be used to supply information about the adaptability of specific areas to a well-defined purpose.

Current photography is scant and what there is should be used to its fullest capacity. To do this it is advisable that D/Econ analysts be made aware of Mission Reviews now being received by CIA on distribution from the issuing agencies in the military establishment. The limited number of copies of these available to CIA may make it necessary to have one interested analyst in D/Econ scan them for all and abstract the information needed by others. It is possible that D/Econ will find the information they seek is not treated fully enough in these Mission Reviews. If so, D/GP should reinstate its own reviews of photography that take cognizance of CIA needs. At present D/GP is handicapped for such procedure by lack of personnel, both for scanning the photography and for duplication support. However, if D/Econ considers such reviews important to its mission, ways and means should be found to produce them.

It is likely that analysts in D/Econ are aware of photo targets that may yield highly important information. If D/GP is kept alerted to these as they occur, an effort will be made to place these targets on flight plans when and if possible. Such targets must be important enough to warrant the risk involved photographing them. Equally important to placing targets on the "wanted" list is deleting those that have lost their importance. Deletion should be made as soon as the target loses its importance for any reason. A periodic review of the entire list must be made to eliminate deadwood.

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With CD/FE, OCI

The problems within this division are essentially the same as those in CS/Sov, OCI. Discussion with the division chief and his various branch chiefs lead to the same broad conclusions: there is real need for the information found on photographs to supplement the other sources; specific problems arise from knowledge of other sources of information that will benefit photo information; specific photo targets are known that will yield valuable information.

There are definite possibilities that at present more help can be given to CD/FE than to CS/Sov. The stock of aerial photographs of China taken during World War II is now being supplemented with photographs being taken upon limited penetration by the CNAF. There are relatively recent photographs available from Southeast Asia. There are literally tons of photographs available from the Korean area.

It would be advantageous to have an informal conference between CD/FE and D/GP to select one or two test areas and, by means of a coordinated study of them, determine the details of operations that give most promise for a high yield of photo information beneficial to the operation of CD/FE and its branches.

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ANNEX B

AN OUTLINE OF THE COOPERATION BETWEEN PHOTO INTELLIGENCE
AND COMMUNICATIONS INTELLIGENCE IN MIS.G2.WDGS
FROM JUNE 1944 TO JUNE 1946

A small group of highly skilled photo interpreters was assembled in MIS.G2.WDGS in June 1944 to integrate information from aerial photographs with that procured by COMINT. This group operated within the physical boundaries of the special security area. It had complete freedom of access to all analysts operating with COMINT. At first, its sources of photography were the normal channels to naval and air force photo interpretation units in Washington. The delay in getting needed material to the unit in MIS later made it necessary to set up our own procurement system for a limited amount of photography. At all times the bulk of the photography used was procured through the normal channels.

Aerial photographs were used in a great variety of ways to supplement COMINT. The first extensive task was to develop an equation that gave a better estimate of the shipping situation. Although reports of vessels in harbors were abundant, it was not until periodic aerial survey of the harbors was made that we learned that these reports tended to underestimate the amounts of shipping available. A dividend of these surveys was the identification of specific merchant vessels, especially those of neutral nations, trading with Japan. The repair and re-fit of certain war vessels was followed more knowingly than was possible by the regular service photo interpreters.

By combining photo information with [REDACTED] reports and COMINT, the unit was able to plot with some accuracy the warning nets both on the home islands and in peripheral areas.

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Studies of geographic areas in combination with COMINT allowed us to follow with greater accuracy the development of new communities associated with industry and military installations, especially airfields. When bombing of the main islands became intensive, it was possible to better evaluate reports bearing upon the handling of displaced persons.

Although many studies related to industry were carried on by service units, the special MIS unit with the advantage of COMINT was better able to interpret certain phases of the industrial situation at many types of plants where the photo appearance of the

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installation was noncommittal. This was particularly telling since there was a difference in the philosophy of photo interpretation in MIS versus the service units. The interpreters in MIS had access to all forms of intelligence while those in the service units were rather generally denied access to any co-relative information. The service units were seeking photo interpretations; MIS was seeking photo intelligence.

Without doubt, the greatest benefits developed when photo interpreters were guided to areas for study by COMINT. The knowledge that a new type aircraft was on a specific field on specific days brought about the most careful scrutiny of the field and often produced the first physical data upon the new type. In order to release this information at a level where it could gain wide dissemination and to evaluate critically the MIS decision, these aircraft were pointed out to the aircraft specialists at PIC.USN, who prepared the detailed studies. The PIC personnel were not aware of how the MIS personnel came to discover the new type except by critical study of the photographs.

It soon became evident that delay in getting photographs of areas particularly significant to COMINT analysts through regular channels necessitated a special channel. This was particularly necessary with the 20th AF. The tendency was for the pictures to be held in the Hawaiian Islands for duplication before forwarding to Washington for duplication and distribution. Arrangements were made with the CG.20 AF to have the Special Security Officer assigned to him scan the daily photo take and select runs to be printed at 20 AF for MIS. These were then forwarded directly to MIS via the daily pouch. The SSO was kept aware of MIS needs in the daily cable to him. Once this was working smoothly, MIS was able to work on pictures within three days of their being taken over Japan and between 7 and 14 days before they were available to Washington-stationed Air Force photo interpreters.

This close cooperation between the producers of photography in the field and MIS photo intelligence led to the next logical step. Through the SSO, photo targets especially interesting to those reading COMINT were included in the recce flight plans. This was done by having the SSO brief the A-2, 20 AF on the MIS requirements previous to each photo run. Before the end of the war, the SSO or his representative attended these planning sessions. However, he was most careful to avoid making any revealing suggestions and left the actual suggesting to A-2. As a sidelight: it became increasingly amusing to both the A-2 and SSO to see the high respect the A-2 gained for "crystal-balling" in this combined operation.

TOP SECRET

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ANNEX C

THE FORMAT AND CONTENT OF CIA-ORIENTED
MISSION REVIEWS

The mission reviews as developed by the various military photo intelligence units are too restricted in content to be of wide use within the CIA community. CIA reviews must take into consideration everything of interest to a wide variety of substantive analysts. In areas where maps are available, each item shown on the map that may be of interest should be checked on the photographs. As a rule-of-thumb, every man-made item should be noted. In the case of well-developed areas this rule can be ignored and only those items noted that have particular interest. It is to be expected that well-developed areas will be the subject of detailed analysis by Military Service units for targeting purposes. If the target reports are not prepared, then D/GP, upon request, should prepare detailed studies to fit the needs of specific Agency units.

To test the time required and the best format for mission reviews oriented toward the needs of the entire CIA community, a single available run of photographs was examined and the data from it logged in two forms. Examples of these forms are part of this annex.

TOP SECRET

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EXAMPLE A

(Standard Mission Review Form)

AREA REVIEWED: Northeast coast of Sakhalin from ZALIV NABIL'SKIY to OKHA (WAC 196)

MISSION: 91 RS R30-30 14 October 1951 - Oblique photos

QUALITY: Good to Fair, large areas are covered by clouds.

Photo

Notes

3-10 LO	DAUTU - neither the settlement nor the road from NABILVO can be confirmed.
10-11 LO	MIL'KVO - no settlement on the offshore bar at the site marked for this name. There is a small settlement on the mainland across from the north end of the bar east and a little south from KATANGLI. At MIL'KVO (?) there is a small wharf, at least seven large oil storage tanks, a possible RR line (or pipe line). Freighter off shore at anchor and probably being worked from lighters out of MIL'KVO (?). KATANGLI - under cloud cover, north edge visible on 24-26 LO.
14 LO	Trails toward the coast ca. 51°53'N.
15 LO	RR r.o.w. (?) in near distance.
16-17 LO	REKA TYM delta area. Much clouded but the following visible: 1. Rd to and across R. UIGLKOT from NOGLIKI. 2. Storage building on R. Tym, so. bank at about map loc. for GEZI. 3. NOGLIKI mostly obscured by clouds. 4. RR r.o.w. well developed. 5. Large storage area related to RR r.o.w. either a major RR construction dump or general storage area. 6. Rd tp PLASTON peninsular confirmed.

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EXAMPLE B

File card format duplicated in gangs of 12 cards to be cut apart by the ultimate user.

91RS R30-30 14 Oct 51 NE SAKHALIN (WAC 205 A,1)
16-17 LO cloudy

REKA TYM delta area: (1) Rd to and across R. UIGLIKUT from NOGLIKI; (2) storage building on R. TYM so. bank at about map loc GEZI; (3) NOGLIKI mostly obscured by clouds; (4) RR r.o.w. well developed; (5) large storage area so. and e. of RR, either major RR construction camp or general storage area or both, mostly obscured by clouds; (6) Rd to PLASTUN peninsular confirmed.

91RS R30-30 14 Oct 51 NE SAKHALIN (WAC 205 A,1)
17-18 LO cloudy

REKA TYM delta area and REKA DUMIOGII: (1) MIYAKOVA map, loc not confirmed, may be under clouds, or may be (2) Small group of large and small building with large piles of timber near by; (3) RR r.o.w. barely beyond survey stage immediately w. of 2; (4) RR bridge under construction over REKA UINI (?).

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The two formats proposed each have advantages. The running report type shown in Example A is the easier of the two to prepare for duplication and takes less support time and less material to prepare. The advantage is gained by D/GP. The card report type shown in Example B is easier to use by the consumer and can fit into a card file along with information accumulated from other sources. Decision to use either should be made only after discussion of the pros and cons of each between D/GP and the consumers. A more useful format may well develop from such discussion.

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TOP SECRET

A P P E N D I X

PORTABLE OPAQUE PROJECTOR FOR INFORMAL CONFERENCES

The idea of group photo-interpretation is not new, but it is a technique that is little exploited and as yet untried in CIA. This idea should be investigated and expanded to include substantive analysts.

The usefulness of D/GP and better solution of problems discovered by photo analysts can be forwarded by presenting the findings of the photo analysts to a small informal group of interested substantive analysts. Because of physical difficulties, the direct study of the photographs by substantive analysts in a group is unwieldy. If a wide-angle opaque projector mounted on a rollable table equipped with a small daylight type screen is used, it will have many advantages.

The need and use of such a device is best illustrated by a hypothetical situation. Let us suppose that a photo analyst, while performing an ordered analysis, discovers a series of enclosures so situated that the purpose of these is not clear. They may be storage dumps of one kind or another; they may be experimental stations; they may be labor compounds; they may be some unsuspected installation. Normally these would not be reported since they do not bear upon the problem that the photo analyst is working on. They may be of utmost importance to substantive analysts who are unaware of the photo cover or the presence of such installations in the area covered. The identification of the installations requires a meeting of minds.

When the photo analyst has made himself thoroughly familiar with the photo evidence, a meeting of interested substantive analysts is called. The photo analysts projects the photographs of the installations and outlines the details of them. Free discussion of the installations should eliminate some of the possibilities and highlight others. Definite identification may be made. If it is not, at least the field of possibilities is narrowed and an overall gain has been made. Such a procedure will sharpen the attention of the photo analyst to other similar installations; it will likewise produce further inquiry on the part of the substantive analyst.

In a similar fashion small groups can be briefed on the content of new photography over areas of particular interest to the group. Such group scanning will be especially beneficial by making the substantive analysts aware of the existence of the photographs and making the photo analysts aware of the degree to which the photography should be exploited at that time.

TOP SECRET